

CLAIMS

What is claimed is:

1. A connector, comprising:

a header having a series of pins secured therein, wherein said header has an upper lip portion that extends in a direction perpendicular to a central axis of a pin within said series of pins, said header also having a lower lip portion that extends in a direction perpendicular to said upper lip portion; and

an outer body having a series of clearance layers therein that are defined by an inner wall of said outer body, wherein each clearance layer within said series of clearance layers has an associated diameter, and wherein said header is connected to a first portion of said inner wall via a solder joint that extends from said lower lip portion of said header to said first portion of said inner wall, said first portion of said inner wall having at least one diameter.

2. The connector of claim 1, wherein said first portion of said inner wall has at least two different diameters.

3. The connector of claim 2, wherein said first portion of said inner wall is further defined by a first clearance layer having a first diameter, a second clearance layer having a second diameter, and a third clearance layer having a third diameter, wherein said first diameter is smaller than said second diameter, and said second diameter is smaller than said third diameter.

4. The connector of claim 3, wherein said inner wall further comprises a second portion and a third portion, said second portion of said inner wall and said upper lip defining a small gap that is capable of receiving said solder, and said third portion being large enough to receive a mating connector.

5. The connector of claim 4, wherein said small gap is approximately 0.001 to 0.002 inch in width.

6. The connector of claim 3, wherein a first space located between said header and said first clearance layer defines a first step, a second space located between said header and said second clearance layer defines a second step, and a third space located between said header and said third clearance layer defines a third step, said first step and said second step being filled with said solder to create said solder joint.

7. The connector of claim 6, wherein said second step has a width that is approximately double a width of said first step, thereby having solder located therein receive approximately half of strain received by solder located within said first step.

8. The connector of claim 2, wherein said series of pins are secured within said header via a glass-like insulating material that forms a hermetic seal between said header and said series of pins.

9. The connector of claim 2, where said header and said outer body are fabricated from at least one metal, and wherein said header and said outer body have similar coefficients of thermal expansion.

10. The connector of claim 2, wherein said outer body further comprises a connecting means.

11. The connector of claim 10, wherein said connecting means is a first groove and a second groove, for allowing a first screw and a second screw to fit therein.

12. The connector of claim 2, wherein said connector is connected to a housing.

13. The connector of claim 12, wherein said connector is connected to said housing by soldering via a vertical solder joint having two widths.

14. The connector of claim 12, wherein said connector is connected to said housing by laser welding.

15. A method for providing a hermetically sealed connector, comprising the steps of:
placing a header within an outer body, wherein said header has a series of pins secured therein, an upper lip portion that extends in a direction perpendicular to a central axis of a pin within said series of pins, and a lower lip portion that extends in a direction perpendicular to said upper lip portion, and wherein said outer body has an inner wall defined by a first clearance layer

having a first diameter, a second clearance layer having a second diameter, and a third clearance layer having a third diameter, wherein said first diameter is smaller than said second diameter, and said second diameter is smaller than said third diameter, said step of placing said header within said outer body resulting in a first step defined by a first space located between said header and said first clearance layer, a second step defined by a second space located between said header and said second clearance layer, and a third step defined by a third space located between said header and said third clearance layer; and

filling said second step and said first step with solder.

16. The method of claim 15, wherein said method results in a small gap being created between said a second portion of said inner wall and said upper lip of said header.

17. The method of claim 16, wherein said small gap is approximately 0.001 to 0.002 inch in width.

18. The method of claim 15, further comprising the step of allowing said solder to solidify, thereby providing a hermetically sealed connector.

19. The method of claim 15, further comprising the step of connecting said connector to a housing.

20. The method of claim 19, wherein said connector is connected to said housing via soldering.

21. The method of claim 19, wherein said connector is connected to said housing via laser welding.